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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jeffrey A. Anderson Art Unit : 3635
Serial No. : 10/633,694 Examiner : Jeanette E. Chapman
Filed : August 5, 2003
Title : METAL FRAMING MEMBER AND METHOD OF MANUFACTURE

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RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

In response to the Notification of Non-Compliant Appeal Brief, attached is a copy of an amended appeal brief in compliance with 37 CFR 41.37.

Should any fees be required by the present response, the Commissioner is hereby authorized to charge Deposit Account **19-4293**.

Respectfully submitted,

Date: 10-29-08


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AMENDED APPEAL BRIEF

Appellants are appealing the rejection of claims 1-30, 32-34, 36-44, 49-51 and 53-58 from the action dated April 2, 2008. A Notice of Appeal is being filed concurrently. Appellants request that the rejection of these claims be reversed.

(i) Real Party in Interest

The real party of interest is Jeffrey A. Anderson. This application has not been assigned to any other entity.

(ii) Related Appeals and Interferences

There are no related appeals or interferences.

(iii) Status of Claims

Claims 1, 3-15, 27-30, 32-34, 36-44, 49-51 and 53-58 are pending and are being appealed. Claims 2, 16-26, 31, 35, 45-48, 52, 59 are canceled. Claims 1, 27, 42, 53 and 54 are in independent form.

(iv) Status of Amendments

No amendments were made to the claims subsequent to the amendments filed on November 9, 2006.

(v) Summary of Claimed Subject Matter

Claim 1 relates to a metal framing member (see for example, reference numeral 100 of Figure 1) including a formed metal sheet having a length and including a web region (see for example, reference numeral 601 of Figure 6) including a plurality of expanded web slots (see reference numeral 103 of Figure 1) including voids (see reference numeral 104 of Figure 1) and metal web elements (see reference numeral 102 of Figure 1) and extending along a portion of the length, wherein the region includes a plurality of reinforcements (see for example, reference numeral 101 of Figure 1) proximate to the web slots and confined to the web elements and exclusive to the web voids. See p. 2, lines 3-5 and p. 4, lines 15-16 of the specification. Each expanded web slot has a length to width ratio of 2:1 or greater. The ratio of the distance between adjacent slots (see reference numeral 103 of Figure 1) prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater. See Figures 1 and 6 of the specification.

Claim 27 relates to a method of manufacturing a framing member including providing a formed metal sheet having a length and a web region (see for example, reference numeral 601 of Figure 6); placing a plurality of slots (see for example, reference numeral 103 of Figure 1) along a portion of the length in the web region such that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater; placing reinforcements (see for example, reference numeral 101 of Figure 1) proximate to the slots confined to the web elements (see reference numeral 102 of Figure 1) and exclusive to the web voids (see reference numeral 104 of Figure 1); and expanding the slots of the web region to form expanded slots (see reference numeral 103 of Figure 1) having a web element (see reference numeral 102 of Figure 1) and a web void (see reference numeral 104 of Figure 1). See also p. 2, line 26 to p. 3, line 3 and Figures 1 and 6 of the specification. Each expanded web slot (see reference numeral 103 of Figure 1) having a length to width ratio of about 2:1 or greater. See Figures 1 and 6 of the specification.

Claim 42 relates to a method of building a structure comprising: placing an expanded framing member in a portion of the structure, the expanded framing structure including a plurality of expanded web slots (see reference numeral 103 of Figure 1) forming a plurality of web elements (see reference numeral 102 of Figure 1) and a plurality of voids (see reference

numeral 104 of Figure 1) in a region of the framing member, wherein the region includes a plurality of reinforcements (see for example, reference numeral 101 of Figure 1) proximate to the web slots and confined to the web elements and exclusive to the web voids. See p. 3, lines 7-16 of the specification. Each expanded web slot (see reference numeral 103 of Figure 1) has a length to width ratio of 2:1 or greater. See Figure 1 of the specification. The ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater. See Figures 1 and 6 of the specification.

Claim 53 relates to a method of manufacturing a framing member comprising: providing a formed metal sheet having a length and a web region (see for example, reference numeral 601 of Figure 6); placing a plurality of slots (see reference numeral 103 of Figure 1) along a portion of the length in the web region such that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater (see Figures 1 and 6 of the specification); expanding the slots of the web region to form expanded slots having a web element (see reference numeral 102 of Figure 1) and a web void (see reference numeral 104 of Figure 1), each expanded web slot having a length to width ratio of about 2:1 or greater and heat treating the member. See p. 2, line 26 to p. 3, line 6 and Figure 1 of the specification.

Claim 54 relates to a metal framing member (see for example, reference numeral 100 of Figure 1) comprising: a formed metal sheet including a plurality of expanded web slots (see reference numeral 103 of Figure 1) in a region of the formed metal sheet, wherein the expanded web slots are heat treated, each expanded web slot having a length to width ratio of 2:1 or greater. See p. 2, line 26 to p. 3, line 6 and Figures 1 and 6 of the specification. The ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater. See Figures 1 and 6 of the specification.

(vi) Grounds of Rejection to be Reviewed on Appeal

1. Whether claims 1, 3-15, 27-30, 32-34, 36-44, 49-51 and 53-58 are unpatentable under 35 U.S.C. § 112, first paragraph.
2. Whether claims 1, 3-15, 17-30, 32-51 and 53-59 are unpatentable under 35 U.S.C. §103(a) as being obvious over German Patent No. 3,336,378 to Knauf in view of

U.S. Patent No. 5,605,024 to Sucato et al., U.S. Patent No. 5,913,788 to Herren,
and U.S. Patent No. 5,527,625 to Bodnar.

(vii) Arguments

1. Whether claims 1, 3-15, 27-30, 32-34, 36-44, 49-51 and 53-58 are unpatentable under 35 U.S.C. § 112, first paragraph

The Examiner has maintained the rejection of claims 1, 3-15, 27-30, 32-34, 36-44, 49-51 and 53-58 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. See Office Action at p. 2. Claims 1, 27, 42, 53 and 54 are independent claims. The Examiner maintains that the phrase “the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater” is not supported by the specification. See Office Action at p. 2.

MPEP 2163.02 states that “The subject matter of the claim need not be described literally in order for the disclosure to satisfy the description requirement.” Rather, it is sufficient if the “description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed.” *Id.* MPEP 2163.02 further states that

[u]nder *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. The test for sufficiency of support in a parent application is whether the disclosure of the application relied upon “reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter.” *Ralston Purina Co. v. Far-Mar-Co., Inc.*, 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985) (quoting *In re Kaslow*, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983)).

The phrase “the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater” is supported by Figures 1 and 6 of the specification. For example, Figure 6 of the specification illustrates that “the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.” When measured directly from Figure 6, the distance between adjacent slots prior to expansion is 1/8th of an inch whereas the width of the formed sheet prior to expansion is an inch. See Figure 6 of the specification.

Accordingly, the specification sufficiently describes the claimed invention in full, clear, concise and exact terms. Appellant respectfully requests reconsideration and withdrawal of this rejection.

2. Whether claims 1, 3-15, 17-30, 32-51 and 53-59 are unpatentable under 35 U.S.C. §103(a) as being obvious over German Patent No. 3,336,378 to Knauf in view of U.S. Patent No. 5,605,024 to Sucato et al., U.S. Patent No. 5,913,788 to Herren, and U.S. Patent No. 5,527,625 to Bodnar.

The Examiner has maintained the rejection of claims 1, 3-15, 17-30, 32-51 and 53-59 under 35 U.S.C. §103(a) as being unpatentable over German Patent No. 3,336,378 to Knauf ("Knauf") in view of U.S. Patent No. 5,605,024 to Sucato et al. ("Sucato"), U.S. Patent No. 5,913,788 to Herren ("Herren"), and U.S. Patent No. 5,527,625 to Bodnar ("Bodnar"). See Office Action at pages 2-10. Claims 1, 27, 42, 53 and 54 are independent.

Claims 1, 27 and 42

Appellant has discovered a metal framing including a web region including a plurality of reinforcements proximate to the web slots and confined to the web elements and exclusive to the web voids, each expanded web slot has a length to width ratio of about 2:1 or greater, and the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater. See claims 1, 27, and 42.

The Examiner refers to Knauf and Sucato and contends that "it is within the scope of both references to expand the web of the stud to the required dimensions for any particular constructions project for which the stud is incorporated." See Office Action at p. 7. Knauf shows a framing member having a much smaller ratio of web element width to **unexpanded** framing member width. See Fig. 1 of Knauf. Knauf does not teach or suggest a framing member in which the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater. This defect is not remedied in Sucato. Sucato discloses "a pair of U-shaped members 62 and 63 which may be formed of a metallic material that are interconnected by bight 64 comprising an expandable mesh 65" (col. 4, lines 22-25 of Sucato), and shows a framing member having a much smaller ratio of web

element width to unexpanded framing member width than recited in claims 1, 27, and 42. See Figs. 20-21 of Sucato.

These defects are not remedied in Herren and Bodnar either. Each of these references fails to teach or suggest a framing member in which the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.

There is no motivation or suggestion within the references to combine Knauf with Sucato, Herren, or Bodnar. The references, alone and in combination, fail to teach the claimed ratio of web element width to unexpanded framing member width.

Accordingly, claims 1, 27, and 42, and claims that depend therefrom are patentable over the combination of Sucato, Bodnar and Herren for at least the reasons discussed above. Appellant requests that this rejection be reconsidered and withdrawn.

Claim 53

As previously explained, none of the references teaches or suggests that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.

None of Knauf, Sucato, or Herren, alone or in combination, teach or suggest heat treating expanded web slots in a formed metal sheet. The Examiner incorrectly asserts that Bodnar teaches this element, referring to column 7, line 50 - column 8, line 65. See Office Action at p. 5. Bodnar actually discloses that the described member **can be formed from cold rolled or hot rolled steel**. See column 2, lines 41-42 of Bodnar. Bodnar does not teach or suggest expanding the slots of the web region to form expanded slots having a web element and a web void, and heat treating the member after expanding the slots. Bodnar merely describes piercing cold rolled or hot rolled steel. MPEP 2145, paragraph X(A), states that “[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in that art at the time the claimed invention was made and **does not include knowledge gleaned only from applicant’s disclosure**, such a reconstruction is proper” (emphasis added by Appellant) (citing *In re McLaughlin* 443 F.2d 1392, 1395 (CCPA 1971)). The Examiner’s obviousness rejection of the

claims violates the basic considerations of obviousness as set forth in MPEP 2141 (“[t]he references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.”).

Additionally, as previously explained, there is no motivation or suggestion to combine the teachings of Knauf, Sucato, Herren, and Bodnar. For at least these reasons, claim 53 should be allowed. Appellant respectfully requests that this rejection be reconsidered and withdrawn.

Claim 54

Claim 54, which recites a metal framing member having expanded web slots that are heat treated, also stands rejected as being obvious over Knauf in view of Sucato, Herren, and Bodnar. As previously explained, Knauf, Sucato, Herren, and Bodnar do not disclose expanded web slots that have been heat treated. Further as previously discussed, these references also fail to teach or suggest that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater, or that the framing member includes a plurality of reinforcements proximate to the web slots and confined to the web elements and exclusive to the web voids.

Additionally, as noted, there is no motivation or suggestion to combine the teachings of Knauf, Sucato, Herren, and Bodnar. For at least these reasons, claim 54 should be allowed. Appellant respectfully requests that this rejection be reconsidered and withdrawn.

Evidence of Non-Obviousness

MPEP 2141 states that the “Office policy is to follow *Graham v. John Deere Co.* in the consideration and determination of obviousness under 35 U.S.C. 103.” MPEP 2141 further states that “[a]s quoted above, the four factual inquiries enunciated therein as a background for determining obviousness are as follows: (A) Determining the scope and contents of the prior art; (B) Ascertaining the differences between the prior art and the claims in issue; (C) Resolving the level of ordinary skill in the pertinent art; and (D) Evaluating evidence of secondary considerations.”

Appellant respectfully requests the consideration of two Declarations under 37 C.F.R. § 1.132 from Roger A. LaBoube (“LaBoube declaration,” attached at Appendix A) and Francis J.

Roost ("Roost declaration," attached at Appendix B), previously filed on September 8, 2007, as evidence of secondary consideration in the determination of obviousness under 35 U.S.C. § 103.

Professor LaBoube is a Professor in the Department of Civil Engineering at the University of Missouri-Rolla. Professor LaBoube has reviewed the metal framing member concept and has concluded the following:

This concept is innovative in that it incorporates the structural features required of a wall stud application. Importantly the metal framing member design concept incorporates a highly efficient use of materials, thus the high strength to weight ratio should be realized.

In addition to providing an efficient load bearing wall stud, the web profile should realize significant energy efficiency. Further, the use of galvanized sheet steel is an appropriate material selection. The sheet steel provides excellent strength and the galvanized coating will ensure long term durability.

See the LaBoube declaration.

Mr. Roost is a retired (unlicensed) Certified Public Accountant (CPA) who was asked to comment on the potential commercial value of the design as presented in U.S. Application Serial No. 10/633,694. Mr. Roost has concluded the following:

First, based on a 2002 study (best available) for non residential construction, interior walls, published by the Steel Framing Alliance, there are 2.8 billion lineal feet of product made annually, that could be affected. A copy of the study is attached as Exhibit A. See page 13. The Reported Tonnage of product ha[s] been converted to lineal feet in exhibit B.

Second, the design concept described in the above-mentioned provisional and utility applications reduces usage of material by 37% as compared to the existing commercial product. Current interior wall technology uses 0.331 lb/ft versus 0.209 lb/ft with this new concept. The savings which result is 0.122 lb/ft. A copy of the calculations is Exhibit C.

Third, according to the 9/6/2007 edition of the American Metal Market, pricing on Galvanized Steel used to make this product is currently is \$39.00 per hundredweight or \$0.39/lb., A copy of the pricing is attached as Exhibit D.

If this design was incorporated into 100% of the available market, the annual market value through material savings alone would be \$133,000,000.00. Calculations are Exhibit E. These calculations do not include Exterior walls, Floors and Roofs, which per the inventor, are also potential uses of this patent [application].

See the Roost declaration.

As such, substantial evidence of non-obviousness exists relating to commercial success and unexpected advantages of Appellant's invention. Appellant respectfully requests reconsideration and withdrawal of this rejection.

CONCLUSION

The rejection of all claims should be reversed for the reasons given above. Should any further fees be required, please charge Deposit Account **19-4293**.

Respectfully submitted,

Date: 10-29-08



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(viii) Claims Appendix

1. A metal framing member comprising: a formed metal sheet having a length and including a web region including a plurality of expanded web slots including voids and metal web elements and extending along a portion of the length, wherein the region includes a plurality of reinforcements proximate to the web slots and confined to the web elements and exclusive to the web voids, each expanded web slot has a length to width ratio of 2:1 or greater, and the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.
2. (Canceled)
3. The member of claim 1, wherein the formed metal sheet includes a web region and a first flange extending from the web region.
4. The member of claim 3, wherein the formed metal sheet further includes a second flange extending from the web region in a direction substantially parallel to the first flange.
5. The member of claim 3, wherein the web region includes the expanded web slots.
6. The member of claim 3, wherein the first flange includes the expanded web slots.
7. The member of claim 3, wherein each of the web region and the first flange includes the expanded web slots.

8. The member of claim 5, wherein each of the web region, the first flange and the second flange includes the expanded web slots.
9. The member of claim 4, wherein the formed metal sheet further includes a closing region extending the first flange to the second flange to form a substantially tubular structure.
10. The member of claim 9, wherein each of the web region, the first flange, the second flange and the closing region includes the expanded web slots.
11. The member of claim 1, wherein each web slot extends along a portion of a length of the member.
12. The member of claim 1, wherein the plurality of web slots is arranged in offset columns substantially parallel to a length of the member.
13. The member of claim 1, wherein the plurality of web slots form three or more columns of slots along the length of the member.
14. The member of claim 13, wherein the plurality of web slots form five or more columns of slots along the length of the member.
15. The member of claim 1, further comprising additional reinforcements in the web elements.
- 16-26. (Canceled)

27. A method of manufacturing a framing member comprising: providing a formed metal sheet having a length and a web region; placing a plurality of slots along a portion of the length in the web region such that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater; placing reinforcements proximate to the slots confined to the web elements and exclusive to the web voids; and expanding the slots of the web region to form expanded slots having a web element and a web void, each expanded web slot having a length to width ratio of about 2:1 or greater.
28. The method of claim 27, wherein providing the formed metal sheet includes roll forming a metal sheet.
29. The method of claim 27, wherein placing the plurality of slots includes piercing slots into the region.
30. The method of claim 27, wherein placing the plurality of slots includes stamping the slots into the region.
31. (Canceled)
32. The method of claim 27, wherein expanding the slots includes passing the formed metal sheet over a tapered block.
33. The method of claim 27, wherein expanding the slots includes mechanically moving sides of the region apart.

34. The method of claim 27, wherein the reinforcements are placed proximate to the slots before expanding the slots.
35. (Canceled)
36. The method of claim 27, wherein the formed metal sheet includes a first flange extending from the web region and a second flange extending from the web region in a direction substantially parallel to the first flange.
37. The method of claim 27, further comprising placing a plurality of slots along a portion of the length in each of the first flange and the second flange.
38. The method of claim 37, further comprising expanding the slots of the first flange and the second flange.
39. The method of claim 36, wherein the formed metal sheet further includes a closing region extending the first flange to the second flange to form a substantially tubular structure.
40. The method of claim 27, wherein placing the plurality of slots includes arranging the slots in offset columns substantially parallel to a length of the member.
41. The method of claim 27, further comprising heat treating the member after expanding the slots.
42. A method of building a structure comprising: placing an expanded framing member in a portion of the structure, the expanded framing structure including a

plurality of expanded web slots forming a plurality of web elements and a plurality of voids in a region of the framing member, wherein the region includes a plurality of reinforcements proximate to the web slots and confined to the web elements and exclusive to the web voids, and each expanded web slot has a length to width ratio of 2:1 or greater and the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.

43. The method of claim 42, further comprising installing wiring, plumbing or a heating duct through at least one void of the member.

44. The member of claim 1, wherein the reinforcements include a strengthening flange.

45-48. (Canceled)

49. The method of claim 27, wherein the reinforcements are placed proximate to the slots after expanding the slots.

50. The method of claim 27, wherein the reinforcements include a strengthening flange.

51. The method of claim 42, wherein the reinforcements include a strengthening flange.

52. (Canceled)

53. A method of manufacturing a framing member comprising: providing a formed metal sheet having a length and a web region; placing a plurality of slots along a portion of the length in the web region such that the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater; expanding the slots of the web region to form expanded slots having a web element and a web void, each expanded web slot having a length to width ratio of about 2:1 or greater; and heat treating the member.
54. A metal framing member comprising: a formed metal sheet including a plurality of expanded web slots in a region of the formed metal sheet, wherein the expanded web slots are heat treated, each expanded web slot having a length to width ratio of 2:1 or greater, and the ratio of the distance between adjacent slots prior to expansion to a width of the formed metal sheet prior to expansion is 1:8 or greater.
55. The member of claim 1, wherein the reinforcements include a dart or dimple.
56. The method of claim 27, wherein the reinforcements include a dart or dimple.
57. The method of claim 42, wherein the reinforcements include a dart or dimple.
58. The method of claim 27, wherein the reinforcements are placed prior to placing the slot.
59. (Canceled)

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(ix) Evidence Appendix

A copy of the declaration under 37 CFR § 1.132 from Roger A. LaBoube filed on September 8, 2007 and relied upon by Appellant in the appeal is attached.

A copy of the declaration under 37 CFR § 1.132 from Francis J. Roost filed on September 8, 2007 and relied upon by Appellant in the appeal is attached.

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(x) Related proceedings Appendix

None.